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Anomalous measurements at SEP63 IMS station in June 2020: a preliminary forensic approach

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In June 2020, the Swedish station SEP63 of the International Monitoring System (IMS) of the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) recorded anomalous values of a mixture of some fission products and neutron activation products not present in the natural background of the station itself. Some concentration activity values above the statistical range of the station were measured. An online search for any relevant news reports was carried out and atmospheric transport modelling (ATM) conducted to identify the possible source of the emissions and to assess the related source-term. The aim of this work is to sketch out a preliminary forensic approach to characterize the event.